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PATENT

HM-612

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Walter Trakowski, et al.

Serial No: 10/519,579

Filed: June 13, 2005

For: USE OF SEPARATION GAS IN CONTINUOUS HOT DIP METAL FINISHING

Examiner: Robert S. Walter, Jr.

Art Unit: 1792

Mail Stop: Appeal Brief-Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

BRIEF ON APPEAL

S I R:

This appeal is taken from the Final Office Action mailed March 4, 2009.

Real Party in Interest

The real party in interest in the above-identified application is SMS Demag AG, Eduard-Schloemann-Strasse 4, 40237 Düsseldorf, Germany.

Related Appeals and Interferences

There are no related appeals or interferences of which Applicants are aware regarding the above-identified application.

Status of Claims

Claim 1 is the only claim pending in the present application.

Claims 2-5 have been canceled.

Claim 1 stands rejected under 35 U.S.C. 103(a) as beign unpatentable over Masaaki in view of Pedley and Sander et al..

Status of Amendments After Final Rejection

A Response after Final Rejection was filed on July 6, 2009. In an Advisory Action dated July 16, 2009, the Examiner indicated that, for purposes of Appeal, the Response would be entered.

Summary of the Claimed Subject Matter

The claimed invention will now be summarized with reference to the drawing being made by way of reference numerals.

Independent claim 1

The claimed invention relates to a method of suppressing the evaporation of zinc in the hot dip coating of metal strip with zinc or zinc alloys, as illustrated in the drawing and discussed on page 5, lines 8-11. Specifically, in the method for suppressing the evaporation of zinc in accordance with the present invention, the metal strip 3 is guided through a furnace snout 1 immersed in the metal bath 2, wherein the metal strip 3 is then guided around a deflecting roller 7 in the metal bath 2, and the metal strip 3 then emerges from the metal bath 2 at the top 8. A gas mixture is present in the furnace snout 1 above the metal bath 2 as an isolating gas 4, as described on page 5, lines 14-16. As stated in line 15 on page 5 of the application, the

isolating gas is argon. The gas mixture is argon with admixtures of butane and/or propane, as stated in lines 15 and 16, respectively, on page 4 of the application.

Grounds of Rejection to be Reviewed on Appeal

The following grounds are presented for review:

Whether claim 1 is unpatentable under 35 U.S.C. 103(a) over Masaaki in view of Pedley and Sander et al.

Argument

The rejection of claim 1 under 35 U.S.C. 103(a) as being unpatentable over Masaaki in view of Pedley and Sander et al.

The reference to Pedley discloses the use of liquefied gas in hot dip metal coating.

The patent to Sander et al. discloses a method for controlling metal coatings on wire or metal strip emerging from metal baths.

The Examiner combined these three references in determining that claim 1 would be unpatentable over such a combination. Applicant respectfully submits that none of these references, nor their combination, teach a method for suppressing the evaporation of zinc in which a gas mixture is present in the furnace snout above the metal bath as an isolating gas, wherein the gas mixture is argon with admixtures of butane and/or propane, as in the presently claimed invention. The use of argon in combination with butane and/or propane is very inexpensive and also effectively prevents the sublimation and vaporization of zinc. The references do not teach using the gas as defined in the claim now on file. Masaaki is comparable to the present invention in that inert gas is also used, such as Xe, Rn, etc. Xe is very expensive and not economical to use. RN is a strongly radioactive gas whose use has environmental and health drawbacks so that it cannot be used. Sander uses propane or butane as means for preventing oxidation of the metal bath. Pedley also is directed to preventing oxidation of the metal bath. The method of Pedley et al. is also completely different from the present invention because primarily liquid nitrogen is used. If Argon were also used it would be clear that liquid Argon would be used.

Liquid nitrogen or argon however, undergoes an explosive expansion from liquid gas to gas due to the high bath temperature. This transformation leads to a very strong uplift of the gases, which is comparable to a fire, via which due to the rising movement of the gas draw in the surrounding air from the sides.

Since it is desired in Pedley to produce a protective layer by evaporating zinc the strong flow or gas movement is very desirable. Also, this results in evaporating zinc, which is exactly the opposite objective of the presently claimed invention.

A combination of argon, propane and butane provides an economical gas mixture that counters gas turbulence, and therewith suppresses zinc evaporation due, on the one hand, to a lack of flow and, on the other hand, to high density.

It is further noteworthy that argon has a low density and thus the requirement of Masaaki for a high density indicates that Masaaki does not teach the present invention.

Conclusion

In view of the above considerations, it is Applicants' position that the rejection of the claims by the Examiner is in error and should be reversed.

The amount of $540.00 to cover the fee for filing an Appeal Brief is being charged as per attached form PTO-2038. Any additional fees or charges required at this time in connection with this application should be charged to Patent and Trademark Office Deposit Account No. 11-1835.

Respectfully submitted,
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Dated: November 9, 2009 By: _____

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on November 9, 2009.

By: _____ Date: November 9, 2009
Friedrich Kueffner

Claims Appendix

1. Method for suppressing the evaporation of zinc in the hot dip coating of steel strip (3) with zinc or zinc alloys, wherein the metal strip (3) is guided through a furnace snout (1) immersed in the metal bath (2), guided around a deflecting roller (7) in the metal bath (2), and then emerges from the metal bath (2) at the top, wherein a gas mixture is present in the furnace snout (1) above the metal bath (2) as an isolating gas (4), wherein the gas mixture is argon with admixtures of butane and/or propane.

Evidence Appendix

N.A.

Related Proceedings Appendix

There are no related proceedings.